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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,404	10/24/2005	Shohichi Nitta	R2184.0470/P470	4485
24998	7590	10/26/2007	EXAMINER	
DICKSTEIN SHAPIRO LLP			LAXTON, GARY L	
1825 EYE STREET NW			ART UNIT	
Washington, DC 20006-5403			PAPER NUMBER	
			2838	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/554,404

Applicant(s)

NITTA ET AL.

Examiner

Gary L. Laxton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6, 7 and 12-14 is/are rejected.
- 7) ☒ Claim(s) 2-5 and 8-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 9/17/2007 have been fully considered but they are not persuasive.

The applicant argues:

"Claim 1 recites a step-up/down DC-DC converter comprising, inter alia, 'a voltage step-up/down part configured to generate and output a predetermined output voltage by stepping up or down an input voltage in accordance with a control signal input to the voltage step-up/down part; and a control part configured to generate an error signal indicating an error between a voltage value obtained by dividing the output voltage and a predetermined reference voltage' (emphasis added). Claims 7 and 13-14 recite similar limitations. Applicants respectfully submit that Yasuda et al. does not disclose these limitations."

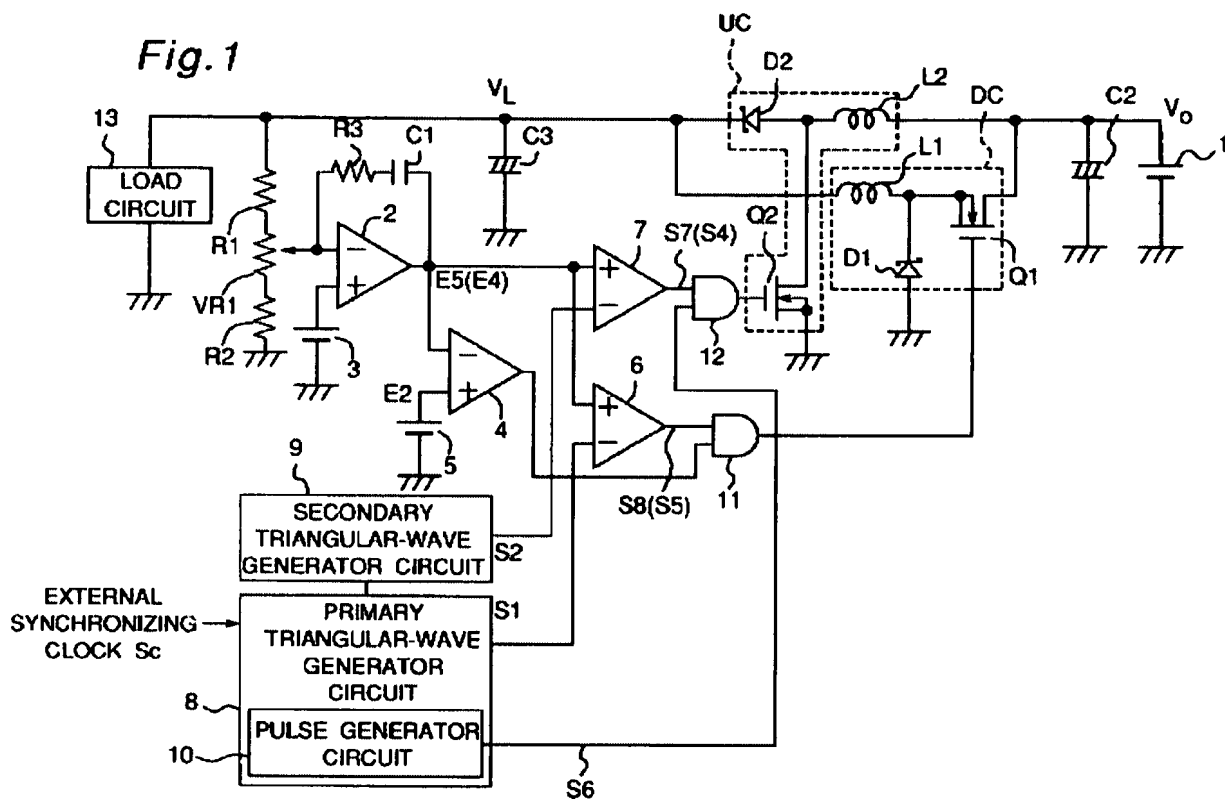
Yasuda et al. disclose a voltage step-up/down part configured to generate and output a predetermined output voltage by stepping up "or" down an input voltage in accordance with a control signal (either from 12 or 11) input to the voltage step-up/down part; and a control part (2) configured to generate an error signal (E5) indicating an error between a voltage value obtained by dividing (e.g. R1, R2) the output voltage and a predetermined reference voltage (3). Claim 1 uses alternative language, i.e. stepping up or stepping down. Yasuda et al. does disclose stepping up according to a control signal (12) or stepping down according to a control signal (11). Therefore, Yasuda et al. disclose the claim limitation of "a voltage step-up/down part" configured to generate and output a predetermined output voltage by stepping up "or" down an input voltage in accordance with a control signal (either from 12 or 11) input to the voltage step-up/down

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part. In other words, the claim does not require one signal to do both. It merely requires a control signal to either step up "or" step down the input voltage.

The applicant further argues:

"Furthermore, Yasuda et al. discloses that the output battery voltage V_o is not divided or compared to a reference voltage, rather it is output directly. See FIG. 1. Applicants respectfully submit that Yasuda et al. does not disclose, teach, or suggest, as recited in claims 1, 7, and 13-14."



One of ordinary skill in the art readily recognizes that the battery voltage V_o in figure 1 is NOT the output. This is evidenced by the fact that element 13 illustrates "LOAD CIRCUIT" (13). Hence, V_o is the INPUT and not the OUTPUT. Load circuit 13 is the output. Therefore, the output is divided by $R1$, $R2$ and compared to a reference 3.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 6, 7 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Yasuda et al.

Yasuda et al. disclose a step-up/down DC-DC converter, comprising: a voltage step-up/down part (Q1, Q2, D1, D1 etc) configured to generate and output a predetermined output voltage by stepping up “or” down an input voltage in accordance with a control signal (either from 12 or 11) input to the voltage step-up/down part; and a control part configured to generate an error signal (2) indicating an error between a voltage value obtained by dividing the output voltage (R1, R2) and a predetermined reference voltage (3), compare (6, 7) the error signal and first and second triangle wave signals (S2, S1), and cause the voltage step-up/down part to perform a step-up or step-down operation based on a result of the comparison, wherein the control part includes: a first triangle wave generator circuit (8, 9) configured to generate the first triangle wave signal compared with the error signal to determine whether to cause the voltage step-up/down part to perform the step-down operation; and a second triangle wave generator circuit (8, 9) configured to generate the second triangle wave signal compared with the error signal to determine whether to cause the voltage step-up/down part to perform the step-up operation, the first triangle wave generator circuit being configured to generate a clock signal synchronized with the generated first triangle wave signal (figs. 4 and 5), and output the

generated clock signal to the second triangle wave generator circuit, the second triangle wave generator circuit being configured to generate the second triangle wave signal synchronized with the first triangle wave signal based on the input clock signal, and output the second triangle wave signal.

Allowable Subject Matter

4. Claims 2-5 and 8-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter: the reasons remain the same as stated in the previous office action dated 6/29/2007.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

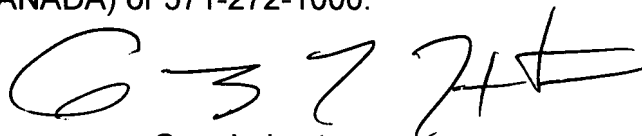
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (571) 272-2079. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'G-L Laxton', with a stylized flourish at the end.

Gary L. Laxton
Primary Examiner
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10/18/2007